

WORK-RELATED HEALTH PROBLEMS AND HEALTH SEEKING BEHAVIOR AMONG RICE MILL WORKERS

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ABSTRACT

Background: Rice mill workers mostly fall into the unorganized sector. Workers are more susceptible to work-related respiratory and musculoskeletal diseases and various kinds of health problems like ophthalmological, dermatological, and gastrointestinal symptoms, injuries and accidents at work place. The aim of this study is to find out the morbidity profile, work-related factors, and health-seeking behavior among rice mill workers. **Method:** A comparative cross-sectional workplace-based study was conducted during January–December 2023 among 366 workers in automated and manual type of rice mills in Chapainawabganj Sadar Upazila. Interviews were conducted with workers who had been engaged in the rice mills for a minimum of 1 year and had provided informed written consent. The interviews were carried out using a pre-designed questionnaire that had been pre-tested. **Results:** The majority of responders in automated and manual mills were adults (20–29 and 30–39 years old). Most respondents (67.2%) had no formal education in manual milling, however 36.1% of automated mill workers had up to secondary school education. Any variety of PPE was not worn at all by the workers. Most workers in both mills worked >48 hours per week. Coughing was widespread among rice mill workers: 64.75% in automated and 59.02% in manual mill. The most prevalent musculoskeletal complaint of automated and manual mill workers was lower back pain (52.46% and 75.41%, respectively). In the automated rice mill, 36.88% had eye irritation or burning, while 27.05% in the manual mill had red eyes. Most rice mill workers (51.64% and 63.11%, respectively) had skin itching or irritation. The automated rice mill workers experienced 33.61% anorexia or nausea, while 37.29% manual rice mill workers had constipation. At both mills, 36.1% and 41.4% had experienced workplace injuries or accidents. In both rice mills, 95.90% and 97.95% prefer allopathic treatment from a quack or nearest pharmacy when unwell. The most respondents had a self-medication tendency of 84.4% and 95.1%, respectively. Both type of rice mills did not offer maternity leave or other medical benefits. **Conclusion:** In a nutshell, adequate health care, along with personal protective equipment and related medical facilities provided by the respective authorities, needs to be put into practice in order to lessen the health problems of the rice mill workers and improve their health-seeking behavior.

KEYWORDS: Rice Mill, Rice mill Workers, Health Problems, Health Seeking Behavior.

INTRODUCTION

The staple diet of the Bangladeshi people is rice. Bangladesh has ranked third in the world for rice production for four consecutive years with a projected output of 58.5 million MT.^[1]

One of the top nations in the world for rice consumption is Bangladesh. Rice accounts for more than 70% of all calories consumed. The three rice-growing seasons in Bangladesh are Aus (summer), Aman (winter), and Boro (spring). By using a combined total of 11.77 million hectares (ha), or more than 75% of all cropped land (BARC, 2011), the combined production of Aus's (2.6 million MT), Aman's (13.2 million MT), and Boro's

(18.7 million MT) paddies was estimated to be 34.5 million metric tons (MT) in FY2016.^[2] The majority of Bangladesh's paddy processing and milling is done in rice mills. The number of industrial rice millers has grown over time. The traditional way of processing rice has been steadily displaced by an increasing trend in mechanical processing units on the market.^[3]

For the manufacture of parboiled rice in Bangladesh, small-scale industries include husking, major, and automatic rice mills. It is a significant area of employment for numerous people who are semi-skilled and unskilled, especially women. Due to the lack of defined guidelines for the establishment and operation of

rice mills, the workers there deal with numerous chronic and acute issues, including respiratory illnesses from occupational dust risk exposure at all stages and in all operating parts of the rice mills. Coughing, dyspnea, wheezing, nasal irritation, eye discomfort, and redness are frequent respiratory symptoms that appear. The goal of typical respiratory physiology is typically to push the dust out of the lung. A number of factors, including the environment of rice mills, use of protective gear, immune status and allergies, duration of exposure, changed respiratory pathophysiology, and the composition and nature of the dust, affect the occurrence of the symptom.^[4] The main task in a rice mill is lifting and moving bulky sacks. Due to a lack of expertise, workers frequently adopt incorrect work postures, which can cause musculoskeletal issues and accidents at work.^[5]

In terms of sickness behavior, health seeking behavior refers to the actions people take in reaction to experiencing symptoms. In addition to knowledge and awareness, there are many other elements that affect how people seek out health. Various factors operating at the individual, family, and community levels, including bio-social profiles, prior experiences with healthcare services, community influences, the availability of alternative healthcare providers, including indigenous practitioners, and last but not least their perceptions of the effectiveness and quality of the services and belief systems, all contribute to this behavior among various populations, particularly in rural communities.^[6] Prior to engaging in health-seeking behaviors, individuals and/or households make decisions that are then influenced by community norms and expectations, as well as provider-related features and behaviors. Any action taken by people who believe they have a health issue or are ill in order to locate a suitable treatment has been classified as health or care-seeking behavior. This makes a contextual examination of care-seeking behavior necessary because the nature of care-seeking is not homogeneous and depends on both cognitive and noncognitive elements. Context may influence cognition or consciousness in addition to societal and economic considerations.^[7]

Maintaining the better health of the rice mill workers is crucial for both their continued productivity and the growth of our nation's economy. I could find only a few researches on the work-related health problems and health seeking behavior among the rice mill workers. Knowing this fact, it encouraged me to work on this matter further. The relevant authorities can profoundly

use the data driven by this study in order to identify health problems and also to support the implementation of the obligatory actions to improve the workers' health.

MATERIALS AND METHODS

The study was based on a comparative cross-sectional study on work-related health problems and health seeking behavior among rice mill workers in selected rice mills. The total period of the study was one year (1st January to 31st December 2023). It was conducted in selected automated and manual type of rice mills in Chapainawabganj Sadar Upazila. Chapainawabganj Sadar is an Upazila in Chapainawabganj district. The study population of this study was both male and female workers who worked in selected rice mills (automated and manual) in Chapainawabganj Sadar Upazila. They worked in various sections, such as cleaning, drying, boiling, husking, loading and unloading, and storing rice.

As the prevalence of work-related health problems and health seeking behavior specified to both automated and manual rice mills is unknown. So, prevalence (p_1 and p_2) was considered as 50%. Therefore, $P_1 = 0.5$ and $P_2 = 0.5$. Total sample size was $(192 \times 2) = 384$. As the availability for workers of automated rice mills was less compare to manual rice mills, the sample size was divided into three portions for a ratio of 1:2. Therefore, sample for automated rice mill workers was computed to 128 and for manual rice mill workers, it was 256. Convenience sampling technique was followed in this study. Chapainawabganj Sadar Upazila was selected for convenience. After proper greetings and informing the study subjects and purpose, informed written consent was obtained from them. The study instrument was a pre-tested semi-structured questionnaire comprising socio-demographic variables, work-related factors, health problems related symptoms and health seeking behavior related questionnaire. Data was collected by a direct face-to-face interview of the rice mill workers who fulfilled the selection criteria. Before processing the data, it was checked for completeness and internal consistency following the norms of missing data. Data analysis was done using Statistical Package for Social Sciences (SPSS) version 27.0. Descriptive statistics were performed to determine extent of health problems and their health seeking behavior.

Before the study, ethical clearance was taken from the Ethical Review Committee of the National Institute of Preventive and Social Medicine (NIPSOM) Dhaka.

RESULTS

Table 1: Presents the Socio-Demographic Characteristics of the Respondents.

Socio-demographic characteristics		Rice mill type	
		Automated Frequency (%)	Manual Frequency (%)
Age	20 - 29	56 (45.9)	47 (19.3)
	30 - 39	28 (23.0)	74 (30.3)
	40 - 49	18 (14.8)	68 (27.9)

	≥ 50	20 (16.4)	55 (22.5)
	Mean ± SD	33.61 ± 11.576	39.40 ± 10.657
Gender	Male	116 (95.1)	124 (50.8)
	Female	6 (4.9)	120 (49.2)
Religion	Islam	115 (94.3)	244 (100)
	Hindu	7 (5.7)	0 (0)
Educational Qualification	Illiterate/ signature only	32 (26.2)	164 (67.2)
	Primary	30 (24.6)	34 (13.9)
	Secondary	44 (36.1)	36 (14.8)
	Higher secondary/ above	16 (13.1)	10 (4.1)
Marital status	Unmarried	29 (23.8)	22 (9.0)
	Married	85 (69.7)	207 (83.2)
	Divorced/ separated	4 (3.3)	7 (2.9)
	Widow/ widower	4 (3.3)	12 (4.9)
Family member	1 - 5	79 (64.8)	198 (81.1)
	≥ 6	43 (35.2)	46 (18.9)
Income (in Tk)	< 15000	75 (61.5)	161 (66.0)
	≥ 15000	47 (38.5)	83 (34.0)
	Mean ± SD	12662 ± 3220.102	12680 ± 1972.095
Smoking habit	Non-smoker	54 (44.3)	164 (67.2)
	Smoker	68 (55.7)	80 (32.8)

Table 2: Presents Work-Related Factors of the Respondents.

Work-related factors		Rice mill type	
		Automated	Manual
Total working experience (in years)	1-15	116 (95.1)	173 (70.9)
	≥16	6 (4.9)	71 (29.1)
Working hours per week	≤48 hours	18 (14.8)	0 (0.0)
	>48 hours	104 (85.2)	244 (100.0)
	Total	122 (100.0)	244 (100.0)
	Mean ± SD	54.82 ± 2.849	62.08 ± 10.625
Self-perceived difficulties	Yes	59 (48.4)	177 (72.5)
	No	63 (51.6)	67 (27.5)
Self-perceived discomfort	Yes	63 (51.6)	166 (68.0)
	No	59 (48.4)	78 (32.0)

In automated rice mill, workers work in different sections. But in manual rice mill all workers work in all section, it depends upon workload and requirement. In both type of mill, no one found to use any kind of PPE. All the respondents said yes that they could access break time during their work.

Health problems of the respondent

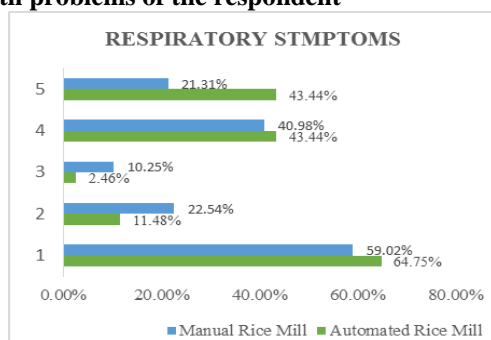


Figure 1 presents distribution of Respiratory symptoms.

Here, 1= Coughing, 2= Breathlessness, 3= Wheezing, 4= Cheat tightness and 5= Nasal irritation

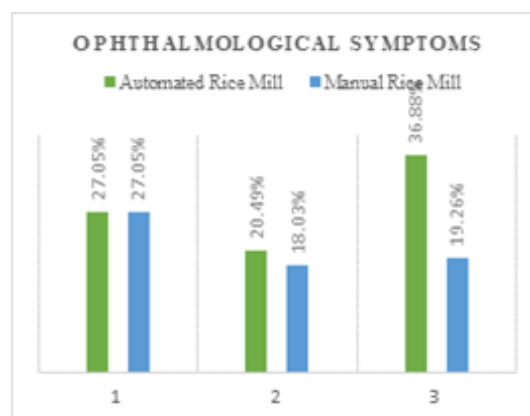


Figure 2 presents distribution of Ophthalmological symptoms.

Here, 1= Red eyes, 2= Watring of eyes and 3= Irritation/ burning sensation of eyes

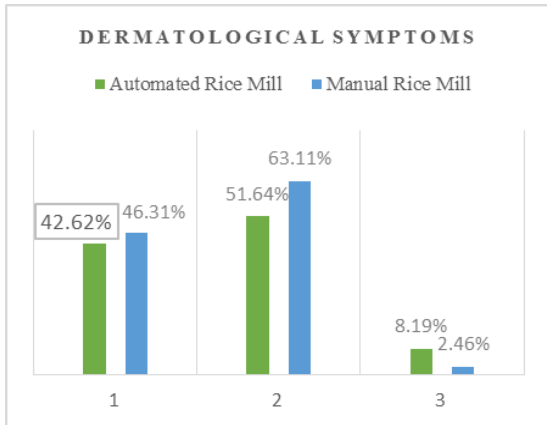


Figure 3 presents distribution of Dermatological symptoms.

Here, 1= Skin rash/allergy, 2= Skin itching/irritation and 3= Rough skin

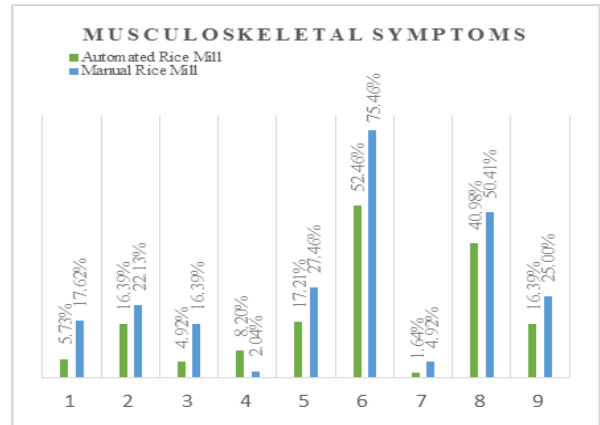


Figure 5 presents distribution of Musculoskeletal symptoms.

Here, 1= Neck, 2= Shoulder, 3= Elbow, 4= Wrist, 5= Upper back, 6= Lower back, 7= Hip/thigh, 8= Knee and 9= Ankle/feet

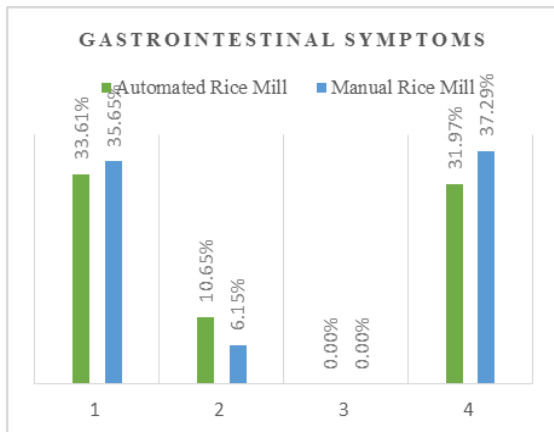


Figure 4 presents distribution of Gastrointestinal symptoms.

Here, 1= Anorexia/nausea, 2= Abdominal pain, 3= Diarrhea and 4= Constipation

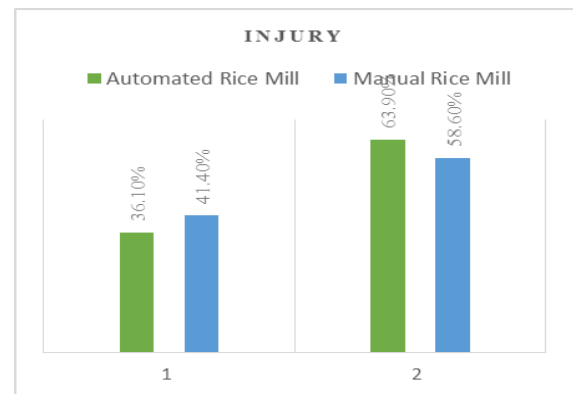


Figure 6 present distribution of Cut injury/accidents in workplace.

Here, 1= Yes and 2= No

Table 4: Presents Health Seeking Behavior of the Respondents.

Health seeking behavior		Rice Mill type	
		Automated Frequency (%)	Manual Frequency (%)
Preferred treatment type	Home remedies	2 (1.64)	7 (2.87)
	Ayurvedic	0 (0.0)	0 (0.0)
	Homeopathy	13 (10.66)	34 (13.93)
	Allopathy	117 (95.90)	239 (97.95)
Influences of community	Yes	57 (46.7)	113 (46.3)
	No	65 (53.3)	131 (53.7)
Self-medication tendency	Yes	103 (84.4)	232 (95.1)
	No	19 (15.6)	12 (4.9)
Location of health care center (in Km)	1 - 5	79 (64.8)	188(77.0)
	≥ 6	43 (35.2)	56 (23.0)
Having past experiences with hospital services	Yes	69 (56.6)	91 (37.3)
	No	53 (43.4)	153 (62.7)
Perception regarding the quality of health services	Good	36 (29.5)	51 (20.9)
	Not good enough	25 (20.5)	33 (13.5)
	Bad	8 (6.6)	7 (2.9)
First-aid measures taken by the authority in the workplace	Yes	122 (100.0)	45 (18.4)
	No	0 (0.0)	199 (81.6)

Availed any medical facility provided by the authority	Yes	15 (12.3)	0 (0.0)
	No	107 (87.7)	244 (100.0)
The amount of availed medical allowances provided by the authority	Full	4 (1.1)	0 (0.0)
	Partial	11 (3.0)	0 (0.0)

Among 366 respondents (in automated and manual rice mills), only 126 were found to be female. And according to their response, no one received any maternity leave and/or any maternity allowances from the authority.

DISCUSSION

In a similar study conducted by Nwosu (2019), the age range 20–29 was about 1.6%, 30–39 was 37.5%, 40–49 was 43.0%, and 50 and above was 17.3% and 73.4% workers had 3–6 years of working experience in this field. 75.9% of rice mill workers had skin irritation, and 90.2% had rough skin problems and 88.5% of workers faced physical injuries.^[8]

In a study by Choudhury (2023): respondents 82.9% of workers were male and rest were female.^[9] A similar study was done by Azees (2022) in Sokoto State, Northwest Nigeria, found 100% of the respondents to be Muslims.^[10] A study conducted by Noman (2020) found that 31.7 percent were illiterate, 55.7 percent passed the primary level, secondary (12.3%), and higher secondary (0.3%).^[11] In another study by Babatunde (2023), they found 62.9% of respondents were married.^[12] A study by Ghosh (2014), 51.6% of workers were found to be smokers.^[13]

In a similar study by Roy (2020) found that working hours per week more than 60 hours among 30.1% respondents and they found 47.6% workers felt self-perceived difficulties during heavy work.^[5] In another study by Rana (2018): only 37.1% respondents were found to use PPE.^[14]

In a study by Musa (2000), 34.9% of rice millers were found to have chest tightness.^[15] In a study by Ansari (2017), 18.0% of rice mill workers had a cough and irritation, watering, or red eyes that are symptoms of chronic conjunctivitis were found among 7.4% of rice mill workers.^[4] According to Prakash (2010) study, 42.66% of workers have respiratory problems.^[16] In a study by Pandirajan (2022), they found 60% lower back pain, 39% knee pain, and 22% shoulder pain among the workers.^[17]

In another study by Rahman (2011), respondents were found to take home remedies (6.0%), 4.8% took traditional medicine while sick, and 42.3% took service from qualified medical personnel. So, it might be summarized that the respondents to the rice mill have a dependence on self-medication tendency. Since they have a long working hour during the day, they do not seem interested in going to the hospital. whereas it is easier to buy drugs without a prescription from the nearest drugstore as required.^[18]

CONCLUSION

Bangladesh has significant contribution to global rice production and plays a key role in the national GDP. The rice mill workers are predominantly adults and mostly illiterate. They face several health challenges: Respiratory, musculoskeletal, ophthalmological, gastrointestinal, and dermatological issues are prevalent among this workforce, compounded by a lack of protective measures such as PPE usage. The majority of the workers prefer to self-medication due to long working hours and inadequate healthcare facilities, with a notable reluctance to seek professional medical help. Manual rice mills, in particular, lack essential provisions like first aid and medical allowances, exacerbating the workers' vulnerability. The absence of maternity leave further compounds the challenges faced by female workers. Urgent interventions, including the implementation of protective measures, healthcare access, and regulatory support, are imperative to address the pressing health concerns of this crucial but neglected sector.

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